

Eye health programs within remote Aboriginal communities in Australia: a review of the literature

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Abstract

Objective: To review the literature regarding the most sustainable and culturally appropriate ways in which to implement eye health care programs within remote Aboriginal communities in Australia from a primary health care perspective.

Data sources: The search included letters, editorials and papers (published and unpublished) from January 1955 to April 2006.

Study selection: The search revealed 1 106 758 papers, books and other related material. The relevancy of this material was determined by abstract and 378 relevant articles were reviewed in their entirety. After reading the relevant articles and the interview transcripts the themes that emerged from each source were extracted.

Conclusions: The ten areas to consider include: clinical practice and access, sustainability, regional-based programs, information technology systems, health worker training, self-determination, cultural and language barriers, funding body responsibilities, embedding specialist programs in primary care services, and other considerations. Further research needs to be undertaken within Aboriginal communities in the area of primary eye health care and barriers to the acceptance of treatment. This may be undertaken using more interactive research methods such as cooperative and narrative inquiry.

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What is known about the topic?

Much of the research into the provision of eye health care to remote communities, both within Australia and overseas, is focussed on the provision of services. There is little in the literature that discusses a primary health care approach to eye health in remote Aboriginal communities.

What does this paper add?

This paper adds a primary health care perspective to the implementation of eye health care programs within remote Aboriginal communities. The benefits of such an approach will be in the acceptability, sustainability and ownership that local communities would develop as a result of primary health care-focussed programs.

What are the implications for practitioners?

It is suggested that health care planners need to consider more than just the provision of service in the implementation of eye health care programs. The broader social determinants of health, those that underlie the persistence of third world eye conditions such as trachoma in remote Aboriginal communities, must be taken into account.

THE LITERATURE on eye care programs within remote Aboriginal communities seems mainly grounded in service provision. There are papers that discuss the use of telehealth,¹⁻⁴ visiting specialist outreach programs,⁵⁻⁷ and the use of digital imaging.⁸⁻¹¹ Each of these methods are important instruments in the promotion of eye health care within communities, but it is known that the development of Aboriginal health services is not sufficient to dramatically reduce the morbidity associated with eye conditions, or indeed the mortality associated with chronic disease. It has been previously noted “that while the past two decades have witnessed very considerable improvements in the areas of health services, the persistent health problems of Aborigines are a constant reminder that poverty, not merely inap-

propriate health care, is the major contributing factor.” (p. 121)¹²

Poverty is but one of the social determinants of health that have a marked impact on the morbidity and mortality faced by remote Aboriginal communities. Other factors such as: health in early childhood; a drug free environment; poor working conditions and unemployment; social support; and access to adequate hygiene services, food and transport¹³ all have an impact on the capacity of these communities to develop, implement and maintain programs directed toward the amelioration of poor eye health and the systemic conditions that impact upon eye health.

Eye health as a public health issue

In May 2003, the 56th World Health Assembly passed resolution WHA56.26 on the elimination of avoidable blindness. This resolution recognised the fact that 45 million people in the world today are blind and that a further 135 million people are visually impaired.¹⁴ The resolution urged member states to develop a national Vision 2020 plan in collaboration with non-government organisations and the private sector to prevent avoidable blindness. The Vision 2020 plan has been adopted by Australia, and aims to eliminate avoidable blindness and vision loss by the year 2020.

In Australia, the main causes of blindness and vision loss are macular degeneration, cataract, glaucoma, diabetic retinopathy, uncorrected or under-corrected refractive error, eye injuries¹⁵ and trachoma. Trachoma, a conjunctivitis that leads to lid scarring and eventually blindness, represents a unique challenge to Australia as a developed nation. Australia is the only developed country in which this condition still exists and it represents the ongoing social, infrastructure and poverty inequalities that are present within remote Indigenous communities.¹⁶ But it is not the only sight problem to have an impact on these communities or other groups within Australia.

Based on the results of the 2001 National Health Survey, 9.7 million Australians or 51% of the population had at least one sight problem.

The most commonly reported eye disorders were refractive errors, such as long-sightedness, short-sightedness, presbyopia and astigmatism. Cataract was reported by 2% of respondents and glaucoma by 1%.¹⁷ The prevalence of sight problems increased rapidly with age, reaching 87% by ages 45–54 and 96% by ages 75 and over. After the age of 40 the amount of visual impairment and blindness increases threefold with each decade of age.¹⁸ It is estimated that as the population ages, vision impairment will emerge as the most prevalent health condition among older people. Blindness and vision loss restrict mobility and increase morbidity among older people, leading to a greater risk of depression, falls and hip fractures; with an associated rise in hospital admissions and demand on community health and welfare services. The vision impairment and blindness that result from these conditions are among the major causes of disability. According to the 1998 *Survey of disability, ageing and carers*, “loss of sight” was the reason or part of the reason for disability given by 1 349 800 people in Australia.¹⁹

Recent independent economic analysis undertaken by Access Economics for the Centre for Eye Research Australia estimated the total cost of vision disorders in Australia to be \$9.85 billion per annum.²⁰ Direct and indirect costs include health system costs, early entry into supported accommodation or an aged care facility, early reliance on home and community care and social welfare systems, carer costs, loss of participation in the community, as well as individual costs such as mobility devices, transport, building modification and lower employment rates. In order to determine where one should start to reduce the health, social and economic burden of poor vision one needs to examine which populations are most at risk of eye health problems.

Certain population groups are at increased risk of developing eye disease, including Aboriginal and Torres Strait Islander Peoples, older people, people with a family history of eye disease, people with diabetes and marginalised and disadvantaged people.²¹ As with many other health conditions, Aboriginal and Torres Strait Islander people

I The seventeen search terms that were used in combination with Aboriginal, Torres Strait Islander, ATSI and Indigenous

- Eye health
- Visual impairment
- Glaucoma
- Program
- Implement/Implementation
- Low vision blindness
- Refractive error
- Outcomes
- Sustainable
- Cataract
- Trachoma
- Culture/Cultural/Culturally appropriate
- Needs
- Diabetic retinopathy
- Trauma
- Impact
- Eye injuries

are at increased risk of developing avoidable blindness and vision loss and are less likely to access eye health care practitioners than other Australians. Uncorrected refractive error, correctable with spectacles, is a leading cause of visual impairment in Aboriginal and Torres Strait Islander communities, followed by cataract, trachoma and diabetes-related eye disease.

People with diabetes develop eye disease as they are at increased risk of developing diabetic retinopathy, cataract and glaucoma. It is estimated that as many as one million Australians have diabetes, though many are unaware of it. Age at onset and duration of diabetes are key factors influencing the prevalence of eye disease in people with diabetes. For example, in young people with diabetes (aged less than 30 years at diagnosis) the prevalence of diabetic retinopathy is 25% during the first 5 years after diagnosis, rising to 50% after 15 years following diagnosis.²² People of Aboriginal and/or Torres Strait Islander descent are at increased risk of diabetes-related eye disease as they are likely to contract diabetes at a younger age, are less likely to have access to

screening and treatment services, and are less likely to accept treatment if it is required.^{23,24}

It is for these reasons that the literature review was undertaken. It is important for both eye health professionals and primary care workers to have an understanding of how to implement a program so that Indigenous eye health is not forgotten. This review provides a theoretical background that will underpin attempts to implement eye health programs within Aboriginal and Torres Strait Islander communities so that these programs have the best chance of success.

Data sources and selection

The search included Australian and international letters, editorials and papers (published and unpublished) from January 1955 to April 2006. The search terms; Aboriginal, Torres Strait Islander, ATSI and Indigenous were used in combination with 17 other terms (Box 1). Reference material available in languages other than English were only reviewed where an abstract was available in English. The databases PubMed, Ovid, MEDLINE, EMBASE, Australian Public Affairs Information Service (APAIS), APAIS-Health, ATSIHealth, and RURAL were searched. Six government and non-government web-based search engines were also utilised. These included <www.health.gov.au>, <www.aihw.gov.au>, <www.abs.gov.au>, <www.google.com>, <www.who.int>, and <www.nhmrc.gov.au>.

Unstructured interviews were organised with Dr Henry Newland AM, a South Australian ophthalmologist who visits remote Aboriginal communities; Desley Culpin from the Aboriginal Health Council of South Australia; and elders from the Yalata and Tulawon communities. Email correspondence was undertaken with Dr Heathcote Wright, PhD student in ophthalmic epidemiology in the Northern Territory; Dr Stephen Cains, medical director for the Fred Hollows Foundation; and Dr Robert McKay, ophthalmologist in Darwin. The themes that emerged from these interviews and the database and internet searches listed above were extracted and tabulated (Box 2).

2 A summary of the resources that related to each of the themes that emerged

Theme	Reference	Interview source	
Clinical practice and access	Madden AC et al 2002 ¹ Blackwell N et al 1997 ² Jennett PA et al 2003 ³ Jin AJ et al 2004 ⁴ Gruen RL et al 2001 ⁵ McDermott R et al 1998 ⁶ Puri S et al 1992 ⁷ Lee SJ et al 2001 ⁸ Taylor HR 1997 ¹⁶ Humphrey K et al 2001 ²⁶	Wilson MR et al 2005 ²⁷ Miller ST et al 2004 ²⁸ Hewitt A et al 2001 ²⁹ Taylor J et al 2004 ³⁰ McDermott RA et al 2004 ³¹ Scrimgeour D et al 1997 ³² Phillips LS et al 2001 ³³ Commonwealth of Australia 2005 ³⁴ Layland B et al 2004 ³⁵ Shah BR et al 2003 ³⁶	Dr Henry Newland AM Elders from Yalata and Umoowa Dr Robert McKay
Sustainability	Taylor HR 1997 ¹⁶ Layland B et al 2004 ³⁵ Thylefors B 1990 ³⁷ Taylor J et al 2001 ³⁸ AIHW 1994 ³⁹ Chino M et al 2006 ⁴⁰	Lee AJ et al 1995 ⁴¹ White IM 1977 ⁴² Gruen R et al 2004 ⁴³ Giblin PT 1989 ⁴⁴ Muttitt S et al 2004 ⁴⁵ Murray RB et al 2005 ⁴⁶	Dr Henry Newland AM Dr Robert McKay
Regional-based programs	Layland B et al 2004 ³⁵ Ewald DP et al 2003 ⁴⁷	Lansingh et al 2001 ⁴⁸ Warchivker et al 2000 ⁴⁹	
Information technology systems	Karagiannis A et al 1996 ⁹ Diamond JP et al 1998 ¹⁰ Taylor HR 1997 ¹⁶ Taylor J et al 2001 ³⁸ Murray RB et al 2005 ⁴⁶ Commonwealth of Australia 2005 ⁵⁰	Resnikoff S et al 2001 ⁵¹ Fuller JD et al 2005 ⁵² McDermott RA et al 2001 ⁵³ Baillie RS et al 2003 ⁵⁴ Downer SR et al 2005 ⁵⁵	Desley Culpin
Health worker training	Resnikoff S et al 2001 ¹⁴ Taylor HR 1997 ¹⁶ Thylefors B 1990 ³⁷ Taylor J et al 2001 ³⁸ AIHW 1994 ³⁹ Commonwealth of Australia 2005 ⁵⁰ Institute of Medicine 2003 ⁵⁶	Tamblyn DM 1984 ⁵⁷ Kermode M et al 2005 ⁵⁸ Shepherd F et al 2003 ⁵⁹ King M et al 2003 ⁶⁰ Hoff W 1992 ⁶¹ Courtright P 1995 ⁶² Ralph-Flint J 2001 ⁶³	Desley Culpin Dr Henry Newland AM Dr Robert McKay
Self-determination	Taylor J et al 2001 ³⁸ Chino M et al 2006 ⁴⁰ Lee AJ et al 1995 ⁴¹	White IM 1977 ⁴² Rowley KG et al 2000 ⁶⁴	
Cultural and language barriers	Taylor HR 1997 ¹⁶ Wilson MR et al 2005 ²⁷ Layland B et al 2004 ³⁵ Commonwealth of Australia 2005 ⁵⁰ Institute of Medicine 2003 ⁵⁶ Maher P 1999 ⁶⁵	Nankivell R 1993 ⁶⁶ Phillis-Tsimikas A et al 2001 ⁶⁷ Abbott P et al 2002 ⁶⁸ Ager A 1990 ⁶⁹ Watson J et al 2002 ⁷⁰ Miller RL et al 2005 ⁷¹ Thompson SJ et al 2000 ⁷²	
Funding body responsibilities	AIHW 1994 ³⁹	Fuller JD et al 2005 ⁵²	Dr Robert McKay Dr Henry Newland AM
Embedding specialist programs in primary care services	Resnikoff S et al 2001 ¹⁴ Taylor HR 1997 ¹⁶ Wilson MR et al 2005 ²⁷ Commonwealth of Australia 2005 ³⁴ Layland B et al 2004 ³⁵ Thylefors B 1990 ³⁷ Taylor J et al 2001 ³⁸ Ewald DP et al 2003 ⁴⁷	Commonwealth of Australia 2005 ⁵⁰ Tamblyn DM 1984 ⁵⁷ WHO 1984 ⁷³ Armstrong RM et al 2005 ⁷⁴ Ring IT et al 2002 ⁷⁵ Thylefors B 1985 ⁷⁶ Landers J et al 2005 ⁷⁷ Laming AC et al 2000 ⁷⁸ Will JC et al 1994 ⁷⁹	Dr Henry Newland AM Dr Robert McKay
Other considerations	King M et al 2003 ⁶⁰ Will JC et al 1994 ⁷⁹ Fletcher AE et al 1999 ⁸⁰ McDermott R 2001 ⁸¹	Thomson N 1984 ⁸² Riley T et al 2005 ⁸³ Burgess CP et al 2005 ⁸⁴	Dr Henry Newland Dr Robert McKay Dr Heathcote Wright

The majority of the literature reviewed provided level IV and level III-3 evidence for the efficacy of their interventions.²⁵ The summary of these data; therefore, represents the framework about how best to design primary eye health care programs and the factors pertinent to their success within remote Aboriginal communities. This may then act as the foundation to create a program or intervention that could be tested in a randomised, controlled manner.

The search revealed 1 106 758 papers, books and other related material. The relevancy of this material was determined by abstract, and relevant articles were reviewed in their entirety. After reading the relevant articles and the interview transcripts the themes that emerged from each source were extracted.

Data synthesis and critical analysis

Analysis of the Australian and international resources led to 10 themes that should be considered in the implementation of eye health care programs within remote Aboriginal communities. These ten areas include: clinical practice and access, sustainability, regional-based programs, information technology systems, health worker training, self-determination, cultural and language barriers, funding body responsibilities, embedding specialist programs in primary care services, and other considerations.

Clinical practice and access

Clinical practice in this setting refers to the direct health professional and client interaction and how this is undertaken. It has been suggested that in order for this interaction to work well there must be: shared understanding in treatment negotiation so that the need for clinical intervention is commonly understood;²⁶ quality of care; and equally accessible treatments and services.^{1,27,28}

Accessibility may be facilitated by telehealth and mobile services.¹ A study in Mount Isa using telemedicine to treat acute ophthalmic conditions reduced non-urgent transfers from 13.4% to 11.0% and urgent transfers from 5.4% to 1.5%.¹ Telehealth can improve access, be cost-effective,

enhance educational opportunities, and improve health outcomes and quality of care. But these technologies require further investigation in order to determine their generalisability.^{3,4}

Wider access may also be facilitated by the development of portable digital imaging systems, which can be easily operated by a variety of health care professionals. This may also provide a means to potentially treat eye diseases in rural and remote areas. This includes the use of mobile retinal photography,⁸ which will be further discussed below.

Specialist outreach programs also provide cost-effective access to health care services for remote communities.⁵ Such services are supported by data that point to better health outcomes for Aboriginal people who live on the homelands as opposed to those who live in more centralised communities.⁶ It is not however, appropriate to offer some services on an outreach basis. As an example of this, eye camps were established many years ago in Australia to improve the acceptability of cataract surgery to Indigenous people living in remote settings, by offering the treatment in remote communities. Such programs have been successful in some countries⁷ but they have been fraught with complications in Australia. Recent evidence highlights the refractive errors and untreated posterior capsule opacities that have developed in Aboriginal patients who have had cataract surgery, and reinforces the need for the ongoing postoperative care that was absent from eye camps.²⁹

There are a number of reasons for clinical practice to fail where clinical interactions are considered. Stereotyping, for example may lead to the misinformed decision that treatment failure is due to poor adherence to a treatment regimen, but this may not be the issue. It may be that a treatment regimen needs to be elevated.³¹ Similarly, therapeutic nihilism must be avoided. This occurs when there is a lack of confidence by health professionals that existing treatment will be effective, so health professionals do not consider or offer potentially effective treatments.^{28,32} Similarly, eye health program staff must avoid clinical inertia, where there is slowness of health care workers to follow clinical guidelines.³³

Guidelines must therefore be defined in consultation with communities, having regard to their needs, and be kept up to date.^{16,34,35}

There are several issues that arise from a discussion of clinical practice and access. Firstly a focus on clinical practice may detract from the attention that is required to the social determinants of health and it may also create a focus on physical health. Improved one-on-one clinical interactions will not break the poverty cycle or ameliorate the social or physical environments within remote Aboriginal communities. These factors need to be specifically addressed in order to improve eye and general health care. It is also true that clinical practice needs to be more than just accessible in the physical sense. There must be holistic clinical practice that acknowledges the physical, spiritual, mental and emotional aspects of health. These aspects build into a community development framework, build on community strengths and recognise the interplay among individuals, family, the Aboriginal community and the non-Indigenous community.³⁰

In considering clinical practice it is also imperative that the expressed and felt needs of communities are not ignored. The members of remote communities must be actively involved in decisions surrounding the forms of clinical practice that are offered and the manner in which this occurs. Failure to do this may result in program failure and it will stall active participation.

Sustainability

The sustainability of programs depends on local ownership and participation,^{35,37-42} adequate levels of funding and appropriate distribution of these resources,^{16,35,38,43} the training of local health workers⁴⁴ and the introduction of information technology resources that will be continually upgraded and maintained.^{45,46}

Sustainability can also be facilitated by appropriate time frames, flexibility, community engagement, local readiness, effective communication, project “champions”, monitoring, evaluating and responding to data, and adequate and ongoing funding.⁸⁵ These components of sustainable programs then need to be implemented and insti-

tuted into routine practice⁵² to ensure the attainment of long-term goals.⁷⁶

Sustainability may also be enhanced by involving optometrists in Aboriginal and Torres Strait Islander eye health,¹⁶ where they could be an active part of the eye care team.⁸⁶

In terms of outreach work, sustainability has a number of prerequisites. These include: an adequate specialist base; an unmet demand for primary care; integration with, accountability to, and capacity building toward a multidisciplinary framework centred in primary care; good communication; visits that are regular and predictable; funding and coordination that recognises both responsibilities to hospitals and the primary care sector; and regular evaluation.⁸⁷

It is true that these factors must be considered in the sustainability of a program that is centered on service delivery. A primary health care approach, however, would demand more from the community to achieve sustainability. It requires and promotes maximum community and individual self-reliance and an exploration and utilisation of available local resources, such that it is members of the remote community that actively participate in the planning, organisation, operation and control of the program as opposed to the external program coordinators.⁸⁸

Regional based programs — crossing state boundaries

The high community mobility among remote Indigenous communities presents a unique set of challenges. These centre on continuity of care, follow-up, and enumeration.^{35,47-49} It also means that the efficacy of some programs is diminished.⁴⁷ Commonwealth and state/territory governments must ensure cross-border funding issues are addressed at a local level so that the quality of care is not jeopardised for patients who may be referred from centres in other states. Further to providing a service that addresses this concern, communities must be actively involved in an education process about the effect of mobility on the prevailing health problems. This may help to inform health decisions and facilitate continuity of care between remote communities and across state borders.

Maintained information technology systems

Information sharing systems, chronic disease registers and recall systems need to be a part of a strategic and nationally consistent approach to eye health data collection. They must integrate and link existing databases to improve health monitoring, examine successful outcomes and health care utilisation.^{14,16,38,50,52-54}

Retinal photography^{9,10} shows promise in the early detection of diabetes-related eye disease. This needs to be incorporated into data sharing across health services, client recall systems and point of care prompts generated by electronic information systems. The primary care providers need to be responsible for the coordination of such screening programs.⁴⁶

Maintained information technology systems would certainly go a long way to facilitating the provision of service. They do not, however, address the need for such services to exist. For example, a concentration on the provision of a digital retinal photography service should not detract from more concerted efforts to address the underlying social issues that underpin the high prevalence of diabetes within some remote Aboriginal communities. Nor should recall systems and patient databases become too paternalistic in their prescription of services at the expense of education and building the capacity of the people to know why and when follow up for various conditions, such as diabetes, should occur.

Health worker training

There will never be sufficient eye specialists in areas where they are most needed, so health workers need to be trained for primary eye care and blindness prevention to progress.³⁷ The process of training health workers should be standardised and meet clinical practice guidelines.^{38,39,16} This may involve the upskilling of nurses and Indigenous health workers,^{14,56,57} and the creation of incentives for ophthalmologists and optometrists to work in and train in rural and remote locations.⁵⁰

It emerged that instructing Indigenous health workers was not just about improving their

knowledge and understanding, but also about facilitating organisational support for their work.⁵⁸ This involves ongoing in-service education and training, and promoting awareness of the role of the health worker.⁵⁹ If this is not done the role of the health worker may be subverted for other purposes.

From a primary health care perspective it is important for health workers not to become dependent on external support services. They need to be encouraged in the direction of self-learning and to become responsive to the needs determined by their respective communities rather than those determined by an external syllabus. This may be facilitated by active community participation in the formulation of syllabi.

The involvement of traditional healers may also represent a way forward. But their training must be supported with systematic follow up, especially where illnesses are not familiar to traditional healers.⁶⁰ Traditional healers must be recognised and valued to become an important part of the primary health care team, or they have the potential to work against projects.⁶¹ Collaborative eye care programs involving traditional healers have had success in other countries.⁶² This is because traditional healers have more eye care interactions with rural and remote Indigenous people than do non-Indigenous health workers. The generalisability of these findings to Aboriginal traditional healers in remote Australia would need further investigation.

Self-determination

Improvements in health have not been commensurate with the amount of expenditure that has occurred due to the loss of control Aboriginal people have over their own lives. When Aboriginal people themselves control and maintain ownership of community-based intervention programs, health improvements can be initiated and are more likely to be sustained.⁴¹ In both remote and settled areas the health services that are controlled by Indigenous people themselves have produced more encouraging results than those that are not.⁴²

Aboriginal community controlled health services are a practical expression of autonomy and self-determination, which is necessary if the structural causes of poor health status among Aboriginal and Torres Strait Islander people are to be addressed.³⁸ Community control and ownership enables the embedding and sustainability of programs. This can occur in association with social environmental policy changes and long-term improvements in important risk factors for chronic disease.⁶⁴

There are also concepts such as community capacity building and community empowerment that have been developed to reduce health disparities and promote public health. These theoretical and cultural frameworks could be modified and integrated to improve public health impacts as programs become more "self-determined."⁴⁰

The implementation of a "self-determination" framework must not, however, be distorted by an emphasis on normative and comparative needs or become paternalistic. Recent debate has raged over the distortion of self-determination that has been perceived to have occurred around the development of mutual obligation agreements between Aboriginal communities and the government.⁸⁹ The evidence surrounding the social determinants of health shows strong links between autonomy and health. Communities that have autonomy and self-respect are more likely to be healthy than those that do not.^{90,91} Such communities are able to build trust, respect, and reciprocity and, in turn, improve health standards. Self-determination in the development and implementation of eye health care programs must not fall prey to the imposition of standards without active consultation as this is likely to be damaging to the success of such programs.

Cultural and language barriers

Indigenous people cannot be treated as a homogenous group. Cultural protocols can vary from community to community, and different events can require different behaviours. This is evident in illness causation where there is an emphasis on social and spiritual dysfunction as a cause of illness; these issues must be taken into account in

order to meet health needs.⁶⁵ Knowledge of these factors only comes to fruition as one becomes familiar with a community.⁶⁶ But as far as possible, cultural sensitivities must be respected in all programs if they are to be successful.³⁵ This may involve cultural training for non-Indigenous health workers^{56,67} and the establishment of bilingual, culturally sensitive programs.⁶⁷⁻⁶⁹ Aboriginal and Torres Strait Islander liaison officers, interpreter services, cultural awareness training and education programs will all help to encourage cultural competence within non-Indigenous health care workers.^{16,27,50,56} Service utilisation may then be increased by appropriately communicating and improving cultural and spiritual understanding among non-Indigenous health care workers.⁷⁰ This response is not only essential in the provision of services but must also be incorporated into a primary health care approach.

It is important not only to have an awareness of cultural sensitivities, but also to demonstrate congruence in values between programs and host communities. Pro-innovation bias should not undervalue Indigenous practices as there may be the danger of assuming a simplistic model of how community organisations adopt new programs.⁷¹ It is also important not to utilise cultural awareness purely as a vehicle to facilitate the implementation of a program, but it should be a two-way process whereby increased cultural and linguistic understanding helps facilitate the exploration of felt and expressed needs and the incorporation of these into program development.

Responsibility of funding bodies

This theme mainly arose from comments by the specialists who have worked in Aboriginal eye health. It was apparent that funding bodies, be they government or non-government, would pledge for the development or implementation of eye health programs and/or staff, however, the resources allocated for such programs may be used for other purposes. This practice frustrates health care workers and creates tensions between the community and those providing the service. There must be support from funding bodies for

adequate and recurrent funds. Mechanisms need to be built into agreements to ensure that resources are being utilised for eye health purposes. It should not be the role of the health care provider to police this matter.^{39,52}

The difficulty this issue highlights is the delicate balance between autonomy, ensuring health outcomes and paternalism. The tension between these three forces could be mitigated by ensuring that remote communities are active participants in decisions regarding the allocation of funding, the purpose of funding and the outcomes that are to be achieved with funding.

Embedding specialist programs within primary health care services

There is an emphasis in the literature that orders the incorporation of specialist programs into primary care programs. In eye health, this implies a range of simple procedures and clinical activities to prevent or cure eye disease as part of primary health care. Simple strategies can be taught to local workers and passed on to the community, for example, personal hygiene in trachoma and the referral of patients with cataract.^{37,73} Such strategies should be incorporated into chronic disease programs,^{16,38} and where possible may involve allied health professionals such as optometrists.³⁵

Inserting specialist services into primary care forces a focus on primary prevention. This is appropriate in eye care, as the majority of causes for visual impairment (diabetic retinopathy, cataract and trachoma) in remote Aboriginal communities are preventable, and such a focus will build the capacity of primary health care workers to identify vision loss, detect eye disease and refer appropriately.^{14,47,50,74,75}

The need for the integrated management of conditions such as trachoma⁷⁶⁻⁷⁸ and diabetes highlights the need to firmly embed eye care not just within the primary health care service but within a primary health care framework that acknowledges the social determinants of health and actively seeks to improve them in order to improve health outcomes. This may lead to a future emphasis on integrating eye care within the programs required to manage chronic dis-

ease.³⁴ This would need to occur alongside the education of consumers and the community about their eye and general health, in order to demonstrate the inextricable relationship between the social environment and their health outcomes.^{27,57,79}

Other considerations

Once an eye health program has identified a need for a patient to have treatment, there is often reluctance to then undergo treatment. Reasons for this among Aboriginal people have not been well studied. A group of rural Indian people cited fear, cost, family responsibilities, ageism, fatalism, and indecision about their ability to cope after surgery, as reasons for declining treatment.⁸⁰ But there are also issues such as ongoing poor socioeconomic status that make the pursuit of health care a lower priority.⁸¹ There needs to be more research into barriers to access to treatment in order to further improve eye health care. The ability to alleviate social inequality and eliminate financial barriers^{79,82} will make headway in this. Such research may be undertaken using more engaging research methods such as cooperative and narrative inquiry. Cooperative inquiry involves the people as researchers into their own problems.⁶⁰ Similarly, narrative inquiry involves Indigenous consumers relating their own stories about illness causation and effect.⁸³ These methods may help to forge insights into the Indigenous world of eye health through investigation into the complexity of community intervention and program implementation.

It is also apparent in the literature that Aboriginal people maintain a belief that continued association with and caring for ancestral lands is a key determinant of health. Primary health care programs could therefore foster engagement with "the country". This may take the form of encouraging enterprise in ecotourism or the sustainable harvesting of wildlife, which would then provide opportunities for physical activity and improved diet, as well as boosting individual autonomy and self-esteem. Natural resource management in this manner may facilitate health and social benefits.⁸⁴

Conclusions

It is apparent from the themes that there continues to be a strong focus on service provision in the development, implementation and research into eye health programs within remote Aboriginal communities. Consideration of the themes clinical practice and access, sustainability, regional-based programs, information technology systems, health worker training, self-determination, cultural and language barriers, funding body responsibilities, embedding specialist programs in primary care services, and other considerations will help to improve the implementation of eye health programs, but it must be recognised that eye health is not divorced from poverty, environment, employment, nutrition or other societal problems. A primary health care approach that acknowledges and works with the politics, culture and needs of communities in order to promote health, encourage active participation, improve basic services and facilitate self-reliance will produce the best eye health outcomes.

Rather than further exploration of the aetiology and epidemiology of Aboriginal eye health it is clear that further research needs to be undertaken within Aboriginal communities in the area of primary eye health care and barriers to the acceptance of treatment. This may be undertaken using more participatory research methods such as cooperative and narrative inquiry.

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Competing interests

The author declares that he has no competing interests.

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